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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,707	06/24/2003	Kimio Nagasaka	116035	7535

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OLIFF & BERRIDGE, PLC  
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EXAMINER
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KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/601,707	NAGASAKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kianni C. Kaveh	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 12-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7</u> . | 6) <input type="checkbox"/> Other: _____  |

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- Acknowledgement made of Applicant's submission of IDS on 7/26/05.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2, including their dependent claims 4-6 and 7-11, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4, 7, 8-11 depend on claim 1 and claims 5-6 depend on claim 2 and therefore they are also rejected.

Claims 1 and 2 are ambiguous, since the limitation 'a same straight line' in claim 1 and 'a first same straight line' and 'a second same straight line' in claim 2 are undefined/unspecified. It is not clear/confusing what/which lines are being compared with each other. Corrections are required.

However, the examiner would examine these claims as understood from the disclosed specification by the applicant.

***Claim Objection***

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Claim 4 is objected because the amended limitation "element" needs to be clearly marked as element[s] shown that the letter s from the phrase 'elements' is deleted.

Correction is required.

***Allowable Subject Matter***

Claim 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if they any of the claims and/or respective base claim(s) is/are no longer rejected under 34USC 112, and be rewritten in independent form *including all of the limitations of the base claim and any intervening claims*.

Claim 4, as stated above, once corrected would be allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious with one of the lenses being disposed on the other surface of the substrate in correspondence with the location of the optical element and another lens being disposed near an end of the optical socket so as to oppose the optical element in combination with the rest of the limitations of the base claim.

Claim 5 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious the light emitter and the light receiver being disposed on one surface of the substrate, and the first and second light-condensing devices and the optical socket being disposed on the other surface of the substrate, with the first and second light-condensing devices being disposed on the other surface of the substrate in correspondence with the locations of the light emitter

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and the light receiver, respectively, in combination with the rest of the limitations of the base claim.

Claim 6, is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious the first and second lenses being disposed so that one of the first and second lenses is disposed on the other surface of the substrate in correspondence with the location of one of the light emitter and the receiver and the other of the first and second lenses is disposed near an end of the optical socket so as to oppose the one of the light emitter and the light receiver in combination with the rest of the limitations of the base claim.

***Reason for allowing claim 36***

Claim 36 is allowed for the following reasons:

Claim 36 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious a light-transmissive substrate to support the optical socket, the first and second light-condensing devices, the light emitter, and the light receiver so that the first optical fiber, the first light-condensing device, and the light emitter are aligned on a first optical axis of the optical transceiver, the light emitter being disposed on one surface of the substrate, and the first light-condensing device and the optical socket being disposed on the other surface of the substrate in correspondence with the location of the light emitter, and so that the second optical fiber, the second light-condensing device, and the light receiver are aligned on a second optical axis of the optical transceiver, the light receiver being disposed on one surface

in combination with the rest of the limitations of the base claim.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buchter (US 6536957).

Regarding claims 1, and 7, Buchter teaches an optical transceiver for use with an optical plug disposed at one end of an optical fiber (shown in at least fig. 1 and/or 2, also abstract), comprising: an optical socket 31 to mount the optical plug 15; a lens 127; an optical element (143 and/or 113) to perform at least one of emitting light in accordance with a supplied electrical signal, and generating an electrical signal in accordance with a received light signal (see items 143/113); and

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a light-transmissive substrate (see substrate 122 and/or 124) to support the optical socket 31, the lens, and the optical element so that the optical fiber, the lens, and the optical element are aligned on an optical axis of the optical transceiver (shown in at least fig. 2, 3 and 7, wherein the optical element, such as 143/113, that the optical fiber 13, the lens 127, are aligned on an optical axis, any direction such as x and/or y axis of the optical transceiver),

wherein the optical axis is a same straight line (shown in fig. 2, wherein the optical axis is a same straight line—i.e., a straight line x axis throughout the optical transceiver); the optical element being disposed on one surface of the substrate, and the lens and the optical socket being disposed on the other surface of the substrate in correspondence with the location of the optical element (see at least fig. 7, item optical element such as 113 is located on one surface of the substrate 101 and the lens 127 and the optical socket are on the other surface of the substrate).

However, Buchter does not explicitly teach wherein the above lens is a 'light-condensing device' and that the substrate being a glass substrate. It would have been obvious to a person of ordinary skill in the art when the invention was made to produce the above transparent substrate a glass which is obviously transparent since such modification/choice does not have bearing in the function of invention and it is conventional and also it is obvious/well-known to those of ordinary skill in the art when the invention was made that a lens used as a focusing device is/known-as a light condenser for focusing beams of light-- as also analogously disclosed by applicant

throughout the specification such as paraq. 0110 regarding light condenser/lens 801,

fig. 24-- since such a device would provide communication links in an integrated optical transceiver system (see col. 1, 1<sup>st</sup>-3<sup>rd</sup> parag.).

- The statements advanced in claims , above, as to the applicability and disclosure of Buchter are incorporated herein as follows.

Regarding claim 2, Buchter teaches an optical transceiver for use with an optical plug that holds one end of a first optical fiber and one end of a second optical fiber (shown in at least fig. 1 and/or 2, also abstract), comprising:

an optical socket 31 to mount the optical plug 15; first and second optical lenses 127; a light emitter 143 to emit light in accordance with a supplied electrical signal; a light receiver 113 to generate an electrical signal in accordance with a received light signal; and a light-transmissive substrate (see substrate 122 and/or 124) to support the optical socket 31, the first and second optical lenses 127, the light emitter, and the light receiver (shown in at least fig. 2, 3 and 7 item substrate supports all socket 31, the lenses 127, the light emitter, and the light receive);

so that the first optical fiber 13a, the first lens, and the light emitter are aligned on a optical axis of the optical transceiver and so that the second optical fiber 13b, the second lens, and the light receiver are aligned on optical axis of the optical transceiver (shown in at least figures 2-7, items first and second light emitting sources, such as



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array 143, light receivers 113a,b,...n, lenses, such as array 161 are aligned on optical axis of the transceiver), wherein the first optical axis is a first same straight line and the second optical axis is a second same straight line (shown in at least fig. 2, wherein the first optical axis is a first same straight line and the second optical axis is a second same straight line —i.e., a same straight line in x-axis throughout the optical transceiver).

However, Buchter does not explicitly teach wherein the above alignment is such that the first optical fiber, the first lens, and the light emitter are aligned on a first optical axis of the optical transceiver and so that the second optical fiber, the second lens, and the light receiver are aligned on optical axis of the optical transceiver. It is obvious/well-known to those of ordinary skill in the art when the invention was made that as shown in at least figures 2-7, items first and second light emitting sources, such as array 143, light receivers 113a,b,...n, lenses, such as array 161 are aligned two dimensionally in X and Y optical axis of the transceiver, in which the optical axis need not to be necessarily perpendicular to each other, and thus the above optical elements are aligned in the first and second optical axis of the transceiver, since such optical configuration would provide communication links in an integrated optical transceiver system (see col. 1, 1<sup>st</sup>-3<sup>rd</sup> parag.).

Regarding claims 3, Buchter teaches an optical transceiver for use with an optical plug disposed at one end of an optical fiber (shown in at least fig. 1 and 2 and 7, also abstract), comprising: an optical socket 31 to mount the optical plug 15; a lens

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127; an optical element (such as photodetector 111 ) to perform at least one of emitting light in accordance with a supplied electrical signal, and generating an electrical signal in accordance with a received light signal (see fig. 2 and 7 items 111); and a light-transmissive substrate (see substrate 122 and/or 124) to support the optical socket 31, the lens 127, and the optical element 111 so that the optical fiber 13, the lens 127, and the optical element 111 are aligned on an optical axis of the optical transceiver (shown in at least fig. 2, 3 and 7, wherein the optical element, such as 111, the optical fiber 13, the lens 127, are aligned on an optical axis, any direction such as x and/or y axis of the optical transceiver), wherein the optical axis is a same straight line (shown in fig. 2, wherein the optical axis is a same straight line—i.e., a straight line x axis throughout the optical transceiver); the optical element 111 being disposed on one surface of the substrate 122/124, and the lens 127 and the optical socket 31 being disposed on the other surface of the substrate 122/124 in correspondence with the location of the optical element 111 (see at least figures fig. 2 and 7, item optical element such as 111 is located on one surface of the substrate 122 and the lens 127 and the optical socket 31/131 are on the other surface of the substrate 122). Regarding Buchter the arguments presented in rejection of claim 1 is analogous in rejection of claim 3.

Regarding claims 9-11, Butcher further teaches; the optical socket being joined to the substrate (see fig. 2, items 31 and 101); the lens being any one of a refractive lens a Fresnel lens, and a Selfoc lens (see fig. 7, item 165. Note also that it is matter of

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choice to choose any of the above lenses), at least one of the optical element and the light emitter being a surface emitting laser (see surface mounted emitters such as 135 and or receivers 113b).

At least Claims 1, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pommer et al. (US 20030201462).

Regarding claims 1, 7 and 9-11, Pommer teaches an optical transceiver for use with an optical plug disposed at one end of an optical fiber (shown in at least fig. 17, see abstract wherein a system of transmitting and receiving light is a transceiver), comprising: an optical socket to mount the optical plug (shown in fig. 17, item socket holding the substrate board and see at least parag. 0274); a lens (see parag. 0260); an optical element to perform at least one of emitting light in accordance with a supplied electrical signal, and generating an electrical signal in accordance with a received light signal (see at least parag. 0084); and a light-transmissive/glass substrate (see parag. 0280) to support the optical socket, the lens, and the optical element so that the optical fiber, the lens, and the optical element are aligned on an optical axis of the optical transceiver (shown in at least fig. 17 in which all optical elements are in an optical axis such x or y axis) the optical element being disposed on one surface of the substrate, and the lens and the optical socket being disposed on the other surface of the substrate in correspondence with the location of the optical element.

However, Pommer does not explicitly teach wherein the above lens is a 'light-condensing device'. It is conventional and also it is well-known to those of ordinary skill in the art when the invention was made that a lens used as a focusing device is known as a light condenser, as admitted by the applicant, since such a device would provide communication links in an integrated optical transceiver system (see col. 1, 1<sup>st</sup>-3<sup>rd</sup> parag.).

Regarding claim 8, Pommer further teaches wherein the substrate having a plurality of guide holes, and the optical socket having a plurality of guide pins that are disposed in the respective guide holes in combination with the rest of the limitations of the base claim (see at least parag. 0313 and 0316).

### ***Response to Arguments and Amendment***

Applicant's argument filed on 6/10/05 have been fully considered but they are not persuasive.

Regarding applicant's questioning of the restriction requirement of the examiner which made FINAL on 4/12/05 the examiner reiterates that the applicants' traversal is on the ground(s) that search and the examination of the entire application can be made without serious burden. This is not found persuasive because the process of making a transceiver cited in claims 1-11 can be made with other optical components such as an optical connector for mounting the optical plug and/or transceiver rather than through an optical socket as stated in process invention group II and/or III. Thus, the search

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requires for group I, claims 1-11, does not require for Group II and/or III and thus the requirement was/is deemed proper and was/is therefore made FINAL.

Regarding applicant's allegation (page 13, last parag.-page 15, 4<sup>th</sup> partag.) that Buchter does not teach transparent substrate to support the optical socket , the lens, and the optical element so that the optical fiber , the lens, and the optical element are aligned on an optical axis of the optical transceiver. The examiner responds that a light-transmissive substrate clearly shown in at least fig. 7, in which the transparent substrate 122/124 corresponding to the substrate 101 and disclosed in at least col. 5, 1<sup>st</sup> paragraph support the optical socket 31, the lens 127, and the optical element 111 so that the optical fiber 13, the lens 127, and the optical element 111 are aligned on an optical axis of the optical transceiver (shown in at least fig. 2, 3 and 7, wherein the optical element, such as 143/113, that the optical fiber 13, the lens 127, are aligned on an optical axis, any direction such as x and/or y axis of the optical transceiver). Additionally as stated above these limitations are also taught by Pommer, see at least FIG. 17 and its corresponding disclosure.

Regarding applicant's allegation (page 13, last parag.-page 15, 4<sup>th</sup> partag.) that Pummer et al. does not teach transparent substrate to support the optical socket , the lens, and the optical element so that the optical fiber , the lens, and the optical element are aligned on in a same straight line optical axis of the optical line. The examiner responds that a light-transmissive substrate clearly shown in at least fig. 17, in which the transparent substrate 261 support the optical socket, in the right side of the substrate, the lens (see parag. 0260), and the optical element 19 so that the optical

fiber 262, the lens, and the optical element 19 are aligned on the same optical axis of the optical line which also corresponds to teaching of claim 3 in which lens(s) and socket are on one surface, of the substrate 261, and optical element on the other surface.

***THIS ACTION IS MADE FINAL***

This action in response to applicant's amendment made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

- The examiner kindly suggests that the applicant to narrow appropriately the scope of the independent claims in order to make the case allowed.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

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The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni  
Patent Examiner  
Group Art Unit 2883

**KAVEN KIANNI**  
**PRIMARY EXAMINER**

March 28, 2005